

**BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY**Meeting Date: 21 December 2005 Division: Growth ManagementBulk Item: Yes X No Department: Marine ResourcesStaff Contact: George Garrett**AGENDA ITEM WORDING:**

Approval of a Locally Funded Agreement (LFA), an adoption Resolution, and a Memorandum of Agreement (MOA) between Monroe County and the Florida Department of Transportation to complete digital true color and color IR aerial photography of the Florida Keys.

ITEM BACKGROUND:

The County has a need for spatially accurate high resolution aerial photography upon which to base its GIS base map layers, notably the Parcel layer. FDOT maintains a long term contract with the firm of Woopert, Inc who regularly completes their aerial over flight work. The contract with Woolpert is a state contract which the County may avail itself of, in this case, to enhance the aerals that FDOT would normally fly approximately every two years. FDOT does not provide aerial ground control for the outlying islands which limits the spatial accuracy of any GIS layer that the County creates based on the previous FDOT aerals. In addition, the County needs photography with greater image resolution than FDOT typically flies. This LFA with FDOT will provide the additional ground control that the County needs in the further development of its GIS and will also provide high resolution images (1"=100' or ½' digital pixel resolution). The total value of the LFA is \$350,000, FDOT will provide \$20,000 toward this cost and the County will provide the remaining \$330,000 as budgeted this Fiscal Year. As photography is completed and processed, the cities will be provided the photography as well and will be asked to participate in the cost, thus reducing the ultimate cost to the County. Each of the cities, the Sheriff's Office, two of the utilities, and Florida Department of Revenue have indicated a willingness to cost share the product costs and have established funding in their adopted budgets. The County will develop interlocal agreements with these entities in the next couple of months to help offset project costs.

PREVIOUS RELEVANT BOCC ACTION:

Adoption of FY 2005-06 Budget for GIS

CONTRACT/AGREEMENT CHANGES:

New Contract

STAFF RECOMMENDATIONS:

Approval

TOTAL COST: \$350,000 BUDGETED: Yes X No COST TO COUNTY: \$330,000 SOURCE OF FUNDS: Cost Center 50002REVENUE PRODUCING: Yes No X AMOUNT Per Month Year APPROVED BY: County Atty X OMB/Purchasing X Risk Management XDIVISION DIRECTOR APPROVAL: Timothy McGarry, Director of Growth ManagementDOCUMENTATION: Included X Not Required DISPOSITION: AGENDA ITEM NO.:

MONROE COUNTY BOARD OF COUNTY COMMISSIONERS

CONTRACT SUMMARY

Contract with:	<u>FDOT</u>	Contract #	<u> </u>
		Effective Date:	<u>December 21, 2005</u>
		Expiration Date:	<u>December 31, 2006</u>

Contract Purpose/Description:

FDOT agreement to complete spatially accurate, high resolution aerial photography to assist the County in GIS project development

Contract Manager:	<u>George Garrett</u>	<u>2507</u>	<u>Marine Resources / 11</u>
	(Name)	(Ext.)	(Department/Stop #)

for BOCC meeting on 12/21/05 Agenda Deadline: 12/02/05

CONTRACT COSTS

Total Dollar Value of Contract: \$ 350,000 Current Year Portion: \$ 330,000
 Budgeted? Yes ☒ No ☐ Account Codes: _____
 Grant: \$ 20,000 _____
 County Match: \$ 330,000 _____
 _____ ~~50,000~~ ~~530,340~~
 _____ - - - -

ADDITIONAL COSTS

Estimated Ongoing Costs: \$_____/yr
(Not included in dollar value above)

For: _____
(eg. maintenance, utilities, janitorial, salaries, etc.)

CONTRACT REVIEW

	Date In	Changes Needed	Reviewer	Date Out
Division Director	12-16-05	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	[Signature]	12-16-05
Risk Management	12-15-05	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	[Signature]	12-15-05
O.M.B./Purchasing	12-15-05	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	[Signature]	12/16/05
County Attorney		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	[Signature]	12/14/05

Comments: _____

RESOLUTION NO. 2005

**A RESOLUTION OF THE MONROE COUNTY BOARD OF COMMISSIONERS
APPROVING A LOCALLY FUNDED AGREEMENT (LFA) WITH THE FLORIDA
DEPARTMENT OF TRANSPORTATION (FDOT) TO COMPLETE HIGH
RESOLUTION DIGITAL TRUE COLOR AND COLOR INFRARED AERIAL
ORTHOGRAPHY FOR THE LAND AREA OF THE FLORIDA KEYS.**

WHEREAS, the Board of County Commissioners wishes to obtain new digital True Color aerial orthophotography at 1"=100' orthophotoscale (0.5' pixel resolution) Color Infrared (CIR) aerial orthophotography at 1"=100' orthophotoscale (0.5' pixel resolution) for the land area of the Florida Keys

WHEREAS, the Florida Department of Transportation (FDOT) will be flying new photography this year and currently has the firm of Woolpert, Inc. under long-term contract; and

WHEREAS, the combination of funds and effort will produce a mutually beneficial product, now, therefore

BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS, MONROE COUNTY, FLORIDA THAT:

Section 1. The Board approves the Locally Funded Agreement (LFA) with the Florida Department of Transportation to complete aerial photography of the Florida Keys.

Section 2. The Board has appropriated funds in the amount of \$330,000 specific to the Project at hand. Said funds will be made available to FDOT upon execution of the LFA and Adoption Resolution and upon receipt by the County of a detailed invoice for service covered in the scope of work associated with the LFA.

PASSED AND ADOPTED by the Board of County Commissioners, Monroe County, Florida at a regular meeting of said Board held on the 21st day of December, A.D., 2005.

Mayor Charles "Sonny" McCoy
Mayor Pro Tem Murray Nelson
Commissioner Dixie Spehar
Commissioner George Neugent
Commissioner David Rice

BOARD OF COUNTY COMMISSIONERS
MONROE COUNTY, FLORIDA

BY: _____
MAYOR/CHAIR PERSON

(SEAL)

ATTEST: DANNY I. KOLHAGE, CLERK

BY: _____
DEPUTY CLERK

APPROVED AS TO FORM

BY:  12/14/05
Suzanne A. Hutton

MEMORANDUM OF AGREEMENT

THIS AGREEMENT, made and entered into this ____ day of _____, 20____, by and between the State of Florida, Department of Transportation, hereinafter referred to as "FDOT", the State of Florida, Department of Financial Services, Division of Treasury, hereinafter referred to as "Treasury", and Monroe County, hereinafter referred to as the "Participant".

WITNESSETH:

WHEREAS, FDOT is currently constructing the following project:

Main Financial Project Nos.: **250608-1-32-04**

County: **Monroe**

hereinafter referred to as the "Project".

WHEREAS, FDOT and the Participant entered into a **Locally Funded Agreement (LFA)** dated _____, 20____, wherein FDOT agreed to perform certain work on behalf of the Participant in conjunction with the Project.

WHEREAS, the parties to this AGREEMENT mutually agreed that it would be in the best interest of the FDOT and the Participant to establish an interest-bearing escrow account to provide funds for the work performed on the Project on behalf of the Participant by the FDOT.

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the parties agree to the following:

1. An initial deposit in the amount of THREE HUNDRED THIRTY THOUSAND DOLLARS (\$330,000.00) will be made by the Participant into an interest-bearing escrow account established by the FDOT for the purposes of the Project. Said escrow account will be opened with the Department of Financial Services, Division of Treasury, Bureau of Collateral Management, on behalf of the FDOT upon receipt of this Memorandum of Agreement. Such account will be an asset of the FDOT.

2. Other deposits will be made only by the Participant as necessary to cover the cost of additional work prior to the execution of any Supplemental Agreements or Amendments.

3. All deposits shall be made payable to the Department of Financial Services, Revenue Processing and mailed to the FDOT Office of Comptroller for appropriate processing at the following address:

Florida Department of Transportation
Office of Comptroller
605 Suwannee Street,
Mail Station 42B
Tallahassee, Florida 32399
ATTN: LFA Section

A copy of this Agreement should accompany any deposits. When the check is mailed to Tallahassee, the District Office should instruct the Participant to mail the District Office a copy of the check.

4. The FDOT's Comptroller or designee shall be the sole signatories on the escrow account with the Department of Financial Services and shall have sole authority to authorize withdrawals from said account.

5. Unless instructed otherwise by the parties hereto, all interest accumulated in the escrow account shall remain in the account for the purposes of the Project as defined in the LFA.

6. The Department of Financial Services agrees to provide written confirmation of receipt of funds to the FDOT.

7. The Department of Financial Services further agrees to provide periodic reports to the FDOT. The FDOT will, in turn, provide periodic reports to the Participant.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
COMPTROLLER

STATE OF FLORIDA
DEPARTMENT OF FINANCIAL
SERVICES, DIVISION OF TREASURY

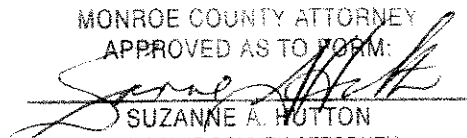
PARTICIPANT SIGNATURE

PARTICIPANT NAME & TITLE

PARTICIPANT ADDRESS

FEDERAL EMPLOYER I.D. NUMBER

MONROE COUNTY ATTORNEY
APPROVED AS TO FORM:



SUZANNE A. HUTTON
ASSISTANT COUNTY ATTORNEY

Date 12/14/03

LOCALLY FUNDED AGREEMENT

THIS LOCALLY FUNDED AGREEMENT (this "Agreement") is made and entered into on this ____ day of _____, 20__, between **MONROE COUNTY**, a political subdivision of the State of Florida, existing under the Laws of the State of Florida, hereinafter called the **COUNTY**, and the **STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION** a component agency of the State of Florida, hereinafter called the **DEPARTMENT**.

WITNESSETH:

WHEREAS, the **DEPARTMENT** has jurisdiction over and maintains the U.S. Highway 1 corridor in Monroe County as part of the State of Florida Highway System; and

WHEREAS, the **COUNTY** wishes to obtain new digital True Color aerial orthophotography at 1"=100' orthophotoscale (0.5' pixel resolution) Color Infrared (CIR) aerial orthophotography at 1"=100' orthophotoscale (0.5' pixel resolution) for the land area of the Florida Keys, hereinafter called the **PROJECT**; and

WHEREAS, the **DEPARTMENT** wishes to obtain same for independent use on current and future **DEPARTMENT** projects by and through its District Six Planning, Environmental Management, and Design Offices; and

WHEREAS, the **DEPARTMENT** maintains a standing contract (#C8C06) with the firm of Woolpert, Inc., to complete such aerial photographic projects as needed; and:

WHEREAS, it is the desire of the **DEPARTMENT** and the **COUNTY** to maximize the benefit to either party by completing such photography as part of the same aerial photography project; and

WHEREAS, the parties are authorized to enter into this Agreement pursuant to **Sections 334.044(7) and 339.12 (2005), Florida Statutes**, and authorize its officers to do so;

NOW, THEREFORE, the parties hereto, in consideration of the mutual covenants and benefits set forth and other good and valuable consideration, receipt of which is hereby acknowledged, hereby agree as follows:

1. Recitals. The Recitals to this Agreement are true and correct and are hereby incorporated herein by reference and made a part hereof.

2. General Requirements.

- (a) The COUNTY shall submit this Agreement to its Board of County Commissioners for ratification or approval by Resolution. A copy of said Resolution is attached hereto as Exhibit "C", 'County Resolution', and is incorporated herein by reference.
- (b) The DEPARTMENT will administer the PROJECT in accordance with the attached Exhibit "A", 'Scope of Services', which is herein incorporated by reference. The DEPARTMENT will complete the project utilizing funds provided by the COUNTY.
- (c) The COUNTY will provide funding to the DEPARTMENT in the amount of THREE HUNDRED THIRTY THOUSAND DOLLARS (\$330,000.00) for the PROJECT, per the Financial Provisions detailed in Section 3 of the this Agreement, and as outlined in the attachment Exhibit "B", "Financial Summary", which is herein incorporated by reference.
- (d) The COUNTY agrees to assist Woolpert, the Department's PROJECT subcontractor, in the establishment of ground control points when located in areas not accessible by road (Offshore islands). As needed, the COUNTY will provide a boat and operator for this effort.

- (e) The COUNTY will work with Woolpert in the review and revision of any interim and final work products, making all information available to both the DEPARTMENT and Woolpert.
- (f) The COUNTY agrees to certify any interim or final work products that it reviews both to the DEPARTMENT and Woolpert as it relates to the financial and contractual relationship between the DEPARTMENT and Woolpert.
- (g) The DEPARTMENT and the COUNTY will serve as co-partners in the review and approval of any interim or final products produced by Woolpert and prior to any payment to Woolpert for said products. This will occur at a PROJECT staff level.
- (h) The PROJECT will culminate in the delivery of two (2) complete sets of work products described in the attached Exhibit "A" for independent use by the DEPARTMENT and the COUNTY, respectively, upon PROJECT completion.
- (i) The DEPARTMENT agrees to provide the COUNTY a copy of its contract with Woolpert (Contract # C8C06), and future Letters of Authorization between Woolpert and the DEPARTMENT whose content will initiate PROJECT completion. DEPARTMENT Letters of Authorization may not be issued until COUNTY funds for the PROJECT have been received by the DEPARTMENT and encumbered onto Contract #C8C06.

3. Financial Provisions.

- (a) The COUNTY agrees that it will, no later than thirty (30) calendar days after the DEPARTMENT's execution of this Agreement, furnish the DEPARTMENT an advance deposit in the amount of THREE HUNDRED THIRTY THOUSAND DOLLARS (\$330,000.00) for partial payment of the estimated PROJECT cost for

Locally Funded Project Number 250608-1-32-04. The advance deposit shall be the total estimated project cost plus allowances. The DEPARTMENT may utilize this deposit for payment of the costs of the PROJECT.

- (b) Should PROJECT modifications or changes to bid items occur that increase the COUNTY's share of total PROJECT costs, the COUNTY will be notified by the DEPARTMENT accordingly. The DEPARTMENT shall also notify the COUNTY as soon as it becomes apparent the actual costs will overrun the award amount. The COUNTY agrees to give reasonable consideration to providing additional funds necessary, subject to the approval of the COUNTY Commission, to ensure that cash on deposit with the DEPARTMENT is sufficient to fully fund its share of the PROJECT. If additional funding is not available or is not approved by the COUNTY Commission for PROJECT costs, the COUNTY agrees to authorize the DEPARTMENT to limit the PROJECT Scope of Services to that which the available funding can cover. Funds due from the COUNTY during the PROJECT shall be paid pursuant to the Florida Prompt Payment Act (*Section 218.70-218.80, Florida Statutes*) only after an amendment to this Agreement is executed in writing authorizing any funds other than those specified herein.
- (c) The DEPARTMENT intends to have its final and complete accounting of all costs incurred in connection with the work performed hereunder within three hundred and sixty days (360) of final payment to the Contractor. The DEPARTMENT considers the PROJECT complete when the final payment has been made to the Contractor, not when the construction work is complete. All PROJECT cost records and accounts shall be subject to audit by a representative of the COUNTY for a period of three (3)

years after final close out of the PROJECT. The COUNTY will be notified of the final cost. Both parties agree that in the event the final accounting of total PROJECT costs pursuant to the terms of this Agreement is less than the total deposits to date, a refund of the excess will be made by the DEPARTMENT to the COUNTY. If the final accounting is not performed within three hundred and sixty (360) days, the COUNTY is not relieved from its obligation to pay for its full participation in PROJECT costs.

- (d) In the event the final accounting of total PROJECT costs is greater than the total deposits to date, the COUNTY will pay the additional amount, subject to COUNTY Commission approval, pursuant to the Florida Prompt Payment Act (*Section 218.70-218.80, Florida Statutes*).
- (e) The payment of funds under this Locally Funded Agreement will be made directly to the DEPARTMENT for deposit and as provided in a Memorandum of Agreement between the COUNTY, the DEPARTMENT, and the State of Florida, Department of Financial Services, Division of Treasury.
- (f) Nothing in this Agreement shall be construed to violate the provisions of Section 339.135(6)(a), Florida Statutes, which provides as follows:

“The Department, during any fiscal year, shall not expend money, incur any liability, or enter into any contract which, by its terms, involves the expenditure of money in excess of the amounts budgeted as available for expenditure during such fiscal year. Any contract, verbal or written, made in violation of this subsection is null and void, and no money may be paid on such contract. The Department shall require a statement from the Comptroller of the Department that such funds are available prior to entering into any such contract or other binding commitment of funds. Nothing herein contained shall prevent the making of contracts for periods exceeding one year, but any contract so made shall be executory only for the value of the services to be rendered or agreed to be paid for in succeeding fiscal years; and this paragraph shall be incorporated verbatim in all contracts of the Department which are for an amount in excess of TWENTY FIVE THOUSAND DOLLARS (\$25,000.00) and which have a term for a period of more than one year.”

4. **Effective Date of this Agreement.** This Agreement shall become effective on the date hereof.

5. **Provisions Separable.** The provisions of this Agreement are independent of and separable from each other, and no provision shall be affected or rendered invalid or unenforceable by virtue of the fact that for any reason any other or others of them may be invalid or unenforceable in whole or in part.

6. **Amendment of Agreement.** This Agreement may only be amended by mutual agreement of the DEPARTMENT and the COUNTY, expressed in writing and executed and delivered by each.

7. **Notices.** All notices, requests, demands and other communications required or permitted under this Agreement shall be in writing and shall be deemed to have been duly given, made and received when delivered (personally, by courier service such as Federal Express, or by other messenger) against receipt or upon actual receipt of registered or certified mail, postage prepaid, return receipt requested, addressed as set forth below:

- (a) If to the County: Monroe County, Department of Marine Resources
2798 Overseas Highway, Suite 420
Marathon, Florida 33050
Attention: George Garrett, Director of Marine Resources
- (b) If to the Department: Florida Department of Transportation
1000 NW 111 Avenue, Room 6137
Miami, Florida 33172
Attention: Kenneth Robertson, JPA Coordinator

Any party may alter the address to which communications or copies are to be sent by giving notice of such change of address in conformity with the provisions of this paragraph for the giving of notice.

8. **Entire Agreement.** This Agreement, including its attached Exhibits, contain the sole and entire Agreement between the parties with respect to such subject matter and supersede any and all other prior written or oral Agreements between them with respect to such subject matter.

9. Binding Effect. This Agreement shall be binding upon the parties and their respective representatives, successors and assigns.

10. Waiver. Waiver by either party of any breach of any provision of this Agreement shall not be considered as or constitute a continuing waiver or a waiver of any other breach of the same or any other provision of this Agreement.

11. Captions. The captions contained in this Agreement are inserted only as a matter of convenience or reference and in no way define, limit, extend or describe the scope of this Agreement or the intent of any of its provisions.

12. Absence of Third Party Beneficiaries. Nothing in this Agreement, express or implied, is intended to (a) confer upon any entity or person other than the parties and their permitted successors and assigns any rights or remedies under or by reason of this Agreement as a third party beneficiary or otherwise except as specifically provided in this Agreement; or (b) authorize anyone not a party to this Agreement to maintain an action pursuant to or based upon this Agreement.

13. Other Documents. The parties shall take all such actions and execute all such documents which may be reasonably necessary to carry out the purposes of this Agreement, whether or not specifically provided for in this Agreement; provided that the parties further acknowledge that certain additional actions by the COUNTY may require approval by the Board of the COUNTY, and, to the extent such approval is required by applicable law, obtaining such approval shall be a condition to the obligations of the COUNTY under this Section.

14. Governing Law. This Agreement and the interpretation of its terms shall be governed by the laws of the State of Florida, without application of conflicts of law principles. Venue for any judicial, administrative or other action to enforce or construe any term of this Agreement or arising from or relating to this Agreement shall lie exclusively in Monroe County, Florida.

15. Indemnification. To the extent permitted by **Section 768.28, *Florida Statutes***, the parties agree to indemnify each other for liability due to any act or omission, neglect or wrongdoing of a party or any of its officers, agents or employees. Further, the parties agree to defend each other against any and all such claims or demands which may be claimed and have arisen as a result of or in connection with the parties' participation in this Agreement. Nothing contained herein shall be construed to contradict the provisions of **Section 768.28, *Florida Statutes***, nor shall this Section be construed to require either party to indemnify the other for the negligent acts of the other.

-- REMAINDER OF PAGE INTENTIONALLY LEFT BLANK --

IN WITNESS WHEREOF, the parties hereto have made and executed this AGREEMENT on the day and year first above written, MONROE COUNTY, signing by and through its County Mayor, and the STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION, signing by and through its District Secretary, each duly authorized to execute same.

MONROE COUNTY:

STATE OF FLORIDA, DEPARTMENT OF
TRANSPORTATION:

BY:

COUNTY MAYOR

BY:

DISTRICT SECRETARY

ATTEST:

(SEAL)


COUNTY CLERK

ATTEST:

(SEAL)

EXECUTIVE SECRETARY

MONROE COUNTY ATTORNEY
APPROVED AS TO FORM:


SUZANNE A. HUTTON
ASSISTANT COUNTY ATTORNEY

Date

12/14/05

LEGAL REVIEW:

COUNTY ATTORNEY

DISTRICT GENERAL COUNSEL

EXHIBIT 'A'
SCOPE OF SERVICES

TRUE COLOR AND COLOR INFRARED ORTHOPHOTO IMAGERY

DEPARTMENT Financial Project Number: **250608-1-32-04** COUNTY: **Monroe**

DEPARTMENT Project Manager: **Gaspar Lobaina, P.E., District Six Land Surveyor**

COUNTY Project Manager: **George Garrett, Director of Marine Resources**

1. INTRODUCTION

2. PROJECT PHASES

A. PHASE 1. ACQUISITION OF TRUE COLOR AND CIR IMAGERY

- I. Project Design
- II. Mission Planning
- III. Image Acquisition
- IV. Ground Control
 - a. Project Datum
 - b. Deliverables

B. PHASE 2. PROCESSING TO DERIVE TRUE COLOR AND CIR IMAGE PRODUCTS.

- I. Digital Photogrammetric Processing Workflow.
 - a. Digital Image Acquisition
 - b. Orientation and Triangulation
 - c. Image Deliverables
- II. DTM Development

1. INTRODUCTION

This document will serve as an outline of requirements for the Monroe County Color/CIR Aerial Imagery Project.

The project area will encompass the Florida Keys areas of Monroe County, Florida.

Project goals are:

- ✓ To provide new digital True Color aerial orthophotography at 1"=100' orthophotoscale (0.5' pixel resolution).
- ✓ To provide new digital Color Infrared (CIR) aerial orthophotography at 1"=100' orthophotoscale (0.5' pixel resolution).
- ✓ To provide all digital aerial orthophotography to meet or exceed current National Map Accuracy Standards (NMAS),
- ✓ Final deliverables are due no later than November 1, 2006.

2. PROJECT PHASES

A. PHASE 1. ACQUISITION OF TRUE COLOR AND CIR IMAGERY

I. Project Design

- ✓ This project shall commence upon DEPARTMENT Letter of Authorization with all contracted services and deliverables in the possession of the Monroe County Commission no later than November 1, 2006. Obvious phases of this project include but are not limited to: planning, ground control, aerial photography, triangulation, DTM development, and aerial imagery delivery.
- ✓ Implementation Plan
 - The Implementation Plan will outline the overall work process for the project, including Woolpert staff responsible for the project phases, schedule for each phase, and will include the quality control steps employed throughout each phase.
- ✓ Project/Progress Reports are due in the possession of the designated contact person for the Monroe County Commission no later than the 15th of the following month.
 - Project/Progress Reports shall include, but not be limited to:
 - a. Work Accomplished – Percent status of work completed for *each* project phase for the reporting month,
 - b. Work To Be Accomplished This Month – All work that is planned to be accomplished during the current month,
 - c. Meetings – Minutes and results of any meetings between The Monroe County Commission, Woolpert, and any sub-contractor or person having some responsibility to the project,
 - d. Problems Encountered – any problems encountered that will have an effect on project deliverables or project outcome,
 - e. Map of Stereo Model Layout – showing completed DTM development to date,

- f. Map of Orthophoto Tile Layout – showing completed and delivered and True Color and CIR orthophotography,
- g. Invoice – for previous months work.

II. Mission Planning

- ✓ The County, for the purposes of planning and data delivery, shall be divided into three delivery areas.
- ✓ The County will provide a boat and operator for three weeks to transport Woolpert surveyors to ground control sites not accessible by road.
- ✓ Woolpert will furnish all other necessary materials, equipment, supervisory, professional and technical services personnel required to manage, survey, document, and process all work task and deliverables associated with this project.
- ✓ The location, size and boundaries of the areas to be photographed, indicated as image tiles, and proposed flight lines will be outlined on digital USGS quadrangle maps at a scale of 1"=6,000' feet. These two maps shall be submitted to the County for approval.
- ✓ Aerial photography will be completed no later than May 1, 2006 – generally between the hours of 10:00am and 2:00pm when the sun angle is not less than 30 degrees. Photography will not be undertaken when the ground is obscured by haze, fog, smoke or dust; or when the clouds or cloud shadows will appear in any one photograph. The photography shall not contain objectionable shadows caused by relief or low solar altitude.
- ✓ The aircraft to be used shall be equipped with all essential navigation and photographic instruments and will be operated by a well-trained and experienced crew. Performance of the aircraft shall be adequate to complete the proposed project in accordance with the technical specifications. All operations shall be in conformity with accepted standards and practice and National Map Accuracy Standards.

III. Image Acquisition

Woolpert will use the Leica ADS40 digital camera to complete image acquisition.

- ✓ 1"=100' Scale Orthophotography. The imagery for 1"=100' scale orthophotography will be flown at a flight height of 4,800 feet above the natural ground level.
- ✓ Crab in excess of three (3) degrees may be cause for rejection of a flight line or any portion thereof in which the excess crab occurs.

- ✓ Tilt of the camera from verticality at the instant of exposure shall not exceed 3 degrees nor shall it exceed 5 degrees between successive exposure stations. Average tilt over the entire project shall not exceed one (1) degree.
- ✓ Imagery deviating from the indicated altitude above by more than 5% may be rejected.
- ✓ Unacceptable aerial photography shall be corrected by Woolpert at no additional cost to the County.
- ✓ The aerial camera shall be a precision Leica ADS40 digital aerial mapping camera. Camera characteristics must be such that the aerial photographs taken can be satisfactorily used in the stereo-plotting process.
- ✓ Images shall be clear and sharp in detail and free from light streaks, static marks, and other blemishes.
- ✓ A licensed Florida Surveyor and Mapper/ASPRS Certified Photogrammetrist employed by Woolpert will supervise all photogrammetric processes.

IV. Ground control

- ✓ All global positioning system (GPS) network design, observation techniques, and data adjustments shall be performed by a licensed Florida Surveyor and Mapper.
 - ✓ Existing ground control shall be used wherever feasible.
 - ✓ Horizontal and vertical control obtained during the GPS survey will be acquired using current accepted best practices.
 - ✓ Woolpert shall provide a horizontal and vertical control layout to support orthophoto production.
 - ✓ All GPS control shall be based on the Florida State Plane Coordinate System (East Zone), referenced to NAD83/90, and expressed in U.S. Survey feet.
 - ✓ All observations will follow Federal Geodetic Control Subcommittee (FGCS) specifications for a second-order class II GPS control survey, resulting in a minimum accuracy of 1:20,000.
 - ✓ All observations will be performed according to the criteria outlined in current FGCS policy specifying the minimum observation time, redundancies, and closures required.
 - ✓ All vertical control shall meet the GPS equivalent of third-order requirements or better.
- a. Project Datum
- ✓ All activities and deliverables for this project shall be based on the following:

- Horizontal Datum: North American Datum 1983, 1990 readjustment (NAD83/90), Coordinates: Florida State Plane, East Zone
- Units: U.S. Survey feet
- Vertical Datum: North American Vertical Datum 1988 (NAVD88)
- Units: Survey feet

b. Deliverables

- ✓ Leica ADS40 documentation serving as calibration report.
- ✓ Ground Control Report on the GPS control survey network. The report should cover but is not limited to the following:
 - Introduction
 - Field work
 - Software
 - Equipment (and whether or not it is owned or leased)
 - Weather
 - Adjustments
 - Closures
 - Station listing with final adjusted coordinates and elevations (as well as an ArcInfo coverage or shapefile of this information)
 - Field project sketch
 - Location diagram for each photo control point
 - Geodetic quality control process

B. PHASE 2. PROCESSING TO DERIVE TRUE COLOR AND CIR IMAGE PRODUCTS.

I. Digital Photogrammetric Processing Workflow

a. Digital Image Acquisition

- ✓ Digital True Color and CIR orthophotography shall be developed to 1"=100' scale, 0.5-foot output pixel ground resolution.
- ✓ Interpolation for a coarser input resolution to a finer output resolution shall not be performed. Image capture will be at a sufficient resolution to produce the required 0.5' pixel resolutions of the True Color and CIR orthophotography.

- ✓ All digital imagery shall be processed in a manner that generates full color intensity range.
 - ✓ The orthophotography modular file naming convention will use the first four digits of the northing and easting state plane coordinate values for the lower left corner of the map sheet. All location values will be based on the lower left corner of the lower left pixel within each map sheet image. Each image name will end with "_c06" prior to the image suffix (for example **b1865092_c06.tif**, or **c1870042_c06.tif**) to signify a 1"=100' color tiff image flown in the year 2006. Consequently, each CIR image name will begin with a lower case "ir" and end with "_06" prior to the image suffix (for example **ir1865092_06.tif**) to signify a color infrared tiff image.
 - ✓ Images will be delivered in either TIFF format with a suitable world file (tif/tfw), or GeoTIFF format (tif), whichever is preferred by the County.
- b. Orientation and Triangulation
- ✓ Transfer of control points to images shall be performed according to accepted industry practices and standards.
 - ✓ Rectified images will be mosaiced together with great care and in a fashion that results in no visible seam, mismatch, or tonal variation between image tiles. Mosaicing between rectified images will be performed in a fashion that maintains the integrity of any building from a single image. That is, where buildings fall near the mosaic line between images, the mosaicing will be performed interactively to assure that any building is a product of a single image. This specific requirement is to prevent the destructive effect of relief displacement so that no building is "cut off" by a mosaic line or appear "distorted" by being a product of two adjacent images.
 - ✓ Image rectification shall be done in accordance with accepted industry standards and practices and shall have accurate X,Y ground coordinates and full color intensity ranges.
 - ✓ All control points visible on screen shall be checked against X,Y information collected from ground control points.
 - ✓ Images will be complete tiles where possible. Partial tiles may be permitted in areas over water beyond the reach of ground control and aerial triangulation.
 - ✓ The positional accuracy of pass points established by analytic triangulation shall meet or exceed National Map Accuracy Standards.
 - ✓ All horizontal and vertical ground positions computed by aerial triangulation will be in the Florida State Plane Coordinate System (East Zone) and referenced to NAD83/90 and NAVD88
- c. Image Deliverables
- ✓ True Color and CIR orthophotography.

- ✓ During regularly scheduled project deliveries by geographic area, the County will receive TIFF (tif/tfw) or GeoTIFF (tif) formatted True Color and CIR orthophotography files.
- ✓ At the completion of the project, Woolpert shall provide to the County two copies of the Aerial Triangulation Report that will cover the following:
 - Calculated coordinates of the pass points,
 - Residuals of the ground control points,
 - Software, and
 - Equipment.

II. DTM Development

Woolpert will develop a digital terrain model (DTM) by first using image autocorrelation techniques to develop an initial terrain model, which will then be supplemented by photogrammetrically-compiled breaklines to strengthen the DTM. The DTM will be sufficient for orthorectification to the required horizontal accuracy standards, but will not be suitable for generation of ground contours.

EXHIBIT 'B'
FINANCIAL SUMMARY

The DEPARTMENT's current Adopted Work Program allocates the following funding, programmed on Financial Project Number 250608-1-32-04, for PROJECT completion:

<u>Fiscal Year:</u>	<u>Amount:</u>	<u>Fund Type:</u>
2005/06	\$330,000.00	Local Funds (LF)
2005/06	\$20,000.00	State Funds (DS)

<u>TOTAL ESTIMATED PROJECT CONSTRUCTION COSTS:</u>	<u>\$350,000.00</u>
<u>COUNTY FINANCIAL PARTICIPATION:</u>	<u>\$330,000.00</u>
<u>DEPARTMENT FINANCIAL PARTICIPATION:</u>	<u>\$ 20,000.00</u>

EXHIBIT 'C'
COUNTY RESOLUTION

To be attached hereto and incorporated herein once ratified by the Monroe County Board of County Commissioners.